Utilization of steel slag aggregate for road bases

Aiban S.A.

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Abstract: Industrial wastes and byproducts have to be disposed off properly so that their environmental impacts are minimized. Alternatively, some of these materials can be utilized in recycling processes, manufacturing of new products, or as construction materials. This paper presents an effective way of utilizing the steel slag aggregate (SSA), which is a byproduct of the steel manufacturing process, in road construction. A comprehensive study was conducted to characterize SSA and determine the potential for its use in road bases. Testing results indicated that SSA is an environmentally safe product and has physical and chemical properties that make it an excellent candidate for road base construction. Laboratory and field data have shown the superior performance of SSA over the locally available calcareous sediments. The resulting California Bearing Ratio values are doubled and the water sensitivity is much less when using SSA instead of the local calcareous material.